What is claimed is:

1. A method of fabricating a mandrel for electroformation of an orifice plate, comprising:

creating an array of mask elements adjacent a substrate;

removing surface regions of the substrate disposed generally between the mask elements to create a base having a base surface and a plurality of pillars extending from the base surface according to the array of mask elements, each pillar having a perimeter defined by an orthogonal projection of one of the mask elements onto the substrate; and

depositing an electrical-conduction enhancer adjacent the base surface and terminating at least substantially at the perimeter, to create a conductive layer to support growth of the orifice plate.

2. The method of claim 1, wherein creating an array of mask elements includes forming a mask layer adjacent a surface of the substrate and selectively removing portions of the mask layer complementary to the mask elements.

3. The method of claim 1, wherein removing includes at least one of wet etching and dry etching the surface regions.

4. The method of claim 1, wherein removing produces a plurality of substantially frusto-conical pillars.

5. The method of claim 1, wherein removing produces a plurality of pillars have at least substantially planar side surfaces.

6. The method of claim 1, wherein depositing an electrical-conduction enhancer includes depositing a metal or a metal alloy onto the base surface.

7. The method of claim 1, wherein depositing an electrical-conduction enhancer includes implanting ions below the base surface and annealing the substrate to form the conductive layer at positions where the ions were implanted.

8. The method of claim 1, wherein depositing an electrical-conduction enhancer includes depositing the electrical-conduction enhancer onto substrate surfaces visible along a line of sight generally orthogonal to the base surface.

9. The method of claim 1, wherein the pillar includes side surfaces adjoining the base surface, and wherein removing surface regions includes undercutting the mask elements to create overhangs disposed above the side surfaces, and wherein depositing an electrical-conduction enhancer includes depositing the electrical-conduction enhancer preferentially on the overhangs relative to the side surfaces.

10. The method of claim 1, which further comprises removing the mask elements after depositing.

11. The method of claim 1, wherein depositing includes terminating placement of the electrical-conduction enhancer within about five micrometers of the perimeter.

12. A method of fabricating a mandrel for electroformation of an orifice plate, comprising:

creating an array of mask elements adjacent a substrate;

removing surface regions of the substrate disposed generally between the mask elements to create a base having a base surface and a plurality of pillars extending from the base surface according to the array of mask elements, each pillar having side surfaces adjoining the base surface; and

selectively depositing an electrical-conduction enhancer onto the base surface relative to the side surfaces, to create a conductive layer adjacent the base surface to support growth of the orifice plate.

13. The method of claim 12, wherein depositing an electrical-conduction enhancer on the base surface creates a conductive layer extending adjacent a substantial portion of the base surface and extending adjacent a minor portion or no portion of the side surfaces.

14. The method of claim 12, wherein the side surfaces include a lower portion beside the base surface and an upper portion spaced from the base surface, and wherein depositing an electrical-conduction enhancer selectively adjacent the base surface includes depositing substantially no electrical-conduction enhancer adjacent the upper portion of the side surfaces.

15. The method of claim 12, wherein the side surfaces adjoin the base surface at a base-pillar boundary, and wherein selectively depositing an electrical-conduction enhancer onto the base surface includes creating a conductive layer that terminates, at least substantially at the base-pillar boundary.

16. The method of claim 15, wherein creating a conductive layer includes creating a conductive layer that terminates within about five micrometers of the base-pillar boundary.

17. The method of claim 12, wherein depositing an electrical-conduction enhancer includes depositing a metal or a metal alloy onto the base surface.

18. The method of claim 12, wherein depositing an electrical-conduction enhancer includes implanting ions below the base surface and annealing the substrate to form the conductive layer at positions where the ions were implanted.

19. The method of claim 12, wherein depositing an electrical-conduction enhancer includes depositing the electrical-conduction enhancer onto substrate surfaces visible along a line of sight generally orthogonal to the base surface.

20. A mandrel for electroformation of an orifice plate produced according to the method of claim 12.

21. A mandrel for electroformation of an orifice plate produced according to the method of claim 1.

22. A mandrel for electroformation of an orifice plate, comprising:

a base having a base surface;

a plurality of pillars joined unitarily with the base and extending from the base surface to define an array, each pillar having side surfaces adjoining the base surface at a base-pillar boundary; and

an electrically conductive layer disposed adjacent the base surface and terminating at least substantially at the base-pillar boundary.

23. The mandrel of claim 22, wherein each pillar tapers away from the base to define a minimum diameter, the mandrel further comprising a plurality of mask elements disposed on corresponding pillars, each mask element having a diameter greater than the minimum diameter of the corresponding pillar to create an overhang.

24. The mandrel of claim 22, wherein the electrically conductive layer terminates within about five micrometers of the base-pillar boundary.

25. A mandrel for electroformation of an orifice plate, comprising:

a base having a base surface;

a plurality of pillars joined unitarily with the base and extending from the base surface to define an array, each pillar having a perimeter defined by an orthogonal projection of a mask element that guided formation of the pillar; and

an electrically conductive layer disposed adjacent the base surface and terminating at least substantially at the perimeter.

26. The mandrel of claim 25, wherein the electrically conductive layer terminates within about five micrometers of the perimeter.

27. The mandrel of claim 25, wherein the masked elements are substantially removed.

28. An orifice plate for an inkjet printhead, the orifice plate having a body portion fabricated using the mandrel of claim 22.

29. An orifice plate for an inkjet printhead, the orifice plate having a body portion fabricated using the mandrel of claim 25.

30. An orifice plate for an inkjet printhead, comprising:

a plate member formed substantially of an electrically conductive material and defining an array of orifices, adjacent orifices of the array having a center-to-center spacing of less than about 50 micrometers.

31. The orifice plate of claim 30, wherein each orifice defines a frustum that is substantially conical.

32. The orifice plate of claim 31, wherein each orifice defines a counterbore adjoining the frustum, the frustum having a minimum diameter, the counterbore having a diameter greater than the minimum diameter.

33. The orifice plate of claim 30, wherein the array includes at least two columns of orifices, each column having at least about 500 orifices.

34. The orifice plate of claim 30, wherein the plate member has a thickness of at least about 20 micrometers.

35. A method of fabricating an orifice plate, comprising:

providing a mandrel which includes a base having a base surface, a plurality of pillars joined unitarily with the base and extending from the base surface to define an array wherein each pillar has side surfaces adjoining the base surface at a base-pillar boundary, an electrically conductive layer disposed adjacent the base surface and terminating at least substantially at the base-pillar boundary; and

depositing electrically conductive material on the mandrel to define an array of orifices in the deposited electrically conductive material.

36. The method of claim 35, wherein depositing electrically conductive material on the mandrel includes electrodepositing the electrically conductive material adjacent the electrically conductive layer of the mandrel.

37. The method of claim 35, wherein depositing electrically conductive material includes progressively growing the electrically conductive material orthogonal to the base surface.

38. The method of claim 37, wherein depositing electrically conductive material on the mandrel includes restricting lateral growth of the deposited electrically conductive material using the pillars so that the pillars define the shape of the orifices in the electrically conductive material.

39. A method of fabricating an orifice plate, comprising:

providing a mandrel which includes a base having a base surface, a plurality of pillars joined unitarily with the base to define an array wherein each pillar has a perimeter defined by an orthogonal projection of a mask element that guided formation of the pillar, and an electrically conductive layer disposed adjacent the base surface and terminating at least substantially at the perimeter; and

depositing electrically conductive material on the mandrel to define an array of orifices in the deposited electrically conductive material.

40. The method of claim 39, wherein depositing electrically conductive material on the mandrel includes electrodepositing the electrically conductive material adjacent the electrically conductive layer of the mandrel.

41. The method of claim 39, wherein depositing electrically conductive material includes progressively growing the electrically conductive material orthogonal to the base surface.

42. The method of claim 41, wherein depositing electrically conductive material on the mandrel includes restricting lateral growth of the deposited electrically conductive material using the pillars so that the pillars define the shape of the orifices in the electrically conductive material.